IN THE CLAIMS

1. (currently amended) A method for testing eye diagram characteristics, comprising the following steps:

sending a precondition from a mainframe to a chip under test, and reading resulting GLPF signals from the chip under test;

digitizing and normalizing the GLPF signals;

reconstructing an eye diagram according to the normalized GLPF signals;

analyzing an error between parameters of the eye diagram and a predefined specification; and

deciding if the chip under test is valid according to the error analysis.

2. (original) The method of Claim 1, wherein the parameters of the eye diagram include a width of the eye diagram, a height of the eye diagram, a cross ratio of the eye diagram and a RMS-Jitter of the eye diagram.

3. (original) The method of Claim 1, wherein the step of reconstructing the eye diagram includes the following steps:

computing an average value of the normalized GLPF signals;

computing positions of zero-crossing points according to the average value; and

utilizing a transmission rate of the GLPF signals as a cycle time of the eye diagram and overlapping a series of GLPF signals into a cycle period of the eye diagram.

4. An apparatus for testing eye diagram characteristics, comprising:

a mainframe, including:

(a) a digitizer for capturing GLPF signals of a chip under test, and digitalizing and normalizing the GLPF signals;

(b) an eye diagram reconstruction means for overlapping a series of GLPF signals into a cycle period of the eye diagram; and

(c) an error comparison means for computing if parameter errors of the eye diagram are in an allowable range; and

a mechanical arm connected to the mainframe for carrying the chip under test.

5. (original) The apparatus of Claim 4, wherein the mechanical arm includes a testing plate for carrying the chip under test.

6. (original) The apparatus of Claim 4, wherein the parameters of the eye diagram include a width of the eye diagram a height of the eye diagram, a cross ratio of the eye diagram and a RMS-Jitter of the eye diagram.